AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A method of processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network, the method comprising the computer-implemented steps of:

providing in the packet-switched network one or more VoIP processors at each of a plurality of alternative routing points such that the VoIP processors form a virtual network overlaid upon the packet-switched network, ~~of a plurality of VoIP traffic processing devices~~ wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate voice packets at a transport layer, a media layer and a signaling layer of the call, and (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions;

detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or~~re~~ more VoIP packets;

detecting, at one of the VoIP processors, network congestion along a routing path in the packet-switched network; and

modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs to re-route a call along a virtual path between two or more of the VoIP processors of the virtual network.

Claim 2 (Original): The method of claim 1, wherein one or more of the plurality of independently callable primitive software functions are selectively called by the one or more application programs that provide the one or more call processing functions and are independent of any underlying protocols of an existing network, and wherein the one or more application programs are executed on one or more devices that are separate from the one or more VoIP processors.

Claim 3 (Original): The method of claim 1, wherein one or more of the plurality of independently callable primitive software functions are selectively called by the one or more application programs that provide the one or more call processing functions and are independent of any underlying protocols of an existing network, and wherein the one or more application programs are executed on the one or more VoIP processors.

Claim 4 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises modifying the one or more VoIP packets at the transport layer.

Claim 5 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises dropping at the transport layer the one or more VoIP packets.

Claim 6 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises injecting at the transport layer new VoIP packets to augment the one or more VoIP packets.

Claim 7 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises dropping at the media layer the one or more VoIP packets.

Claim 8 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises injecting at the media layer new VoIP packets to augment the one or more VoIP packets.

Claim 9 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises dropping at the signaling layer the one or more VoIP packets based on one or more signaling parameters associated with a call signal.

Claim 10 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises injecting at the signaling layer new VoIP packets to augment the one or more VoIP packets.

Claim 11 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises modifying at the media layer one or more media characteristics of a plurality of media characteristics associated with the one or more VoIP packets.

Claim 12 (Original): The method of claim 1, wherein one of the plurality of independently callable primitive software functions comprises modifying at the signaling layer one or more signaling characteristics of a plurality of signaling characteristics associated with the one or more VoIP packets.

Claim 13 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises duplicating the one or more VoIP packets at the transport layer.

Claim 14 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises marking the one or more VoIP packets at the transport layer.

Claim 15 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises labeling the one or more VoIP packets at the transport layer.

Claim 16 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises scheduling for routing the one or more VoIP packets at the transport layer.

Claim 17 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises re-routing the one or more VoIP packets at the transport layer.

Claim 18 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises tunneling the one or more VoIP packets at the transport layer.

Claim 19 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises encrypting the one or more VoIP packets at the transport layer.

Claim 20 (Original): The method of claim 4, wherein modifying at the transport layer the one or more VoIP packets further comprises compressing the one or more VoIP packets at the transport layer.

Claim 21 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises changing a codec associated with the one or more VoIP packets.

Claim 22 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises aggregating the one or more VoIP packets under a single Real-Time Transport Protocol header when the one or more VoIP packets share a common sub-route.

Claim 23 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises compressing headers associated with the one or more VoIP packets.

Claim 24 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises de-coding a media stream associated with the one or more VoIP packets.

Claim 25 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises re-coding a media stream associated with the one or more VoIP packets.

Claim 26 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises re-constructing a media stream associated with the one or more VoIP packets.

Claim 27 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises duplicating a media stream associated with the one or more VoIP packets.

Claim 28 (Original): The method of claim 11, wherein modifying at the media layer one or more media characteristics further comprises re-routing a media stream associated with the one or more VoIP packets.

Claim 29 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises translating one or more signaling protocols from a plurality of signaling protocols associated with the signaling layer.

Claim 30 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises generating call detail records and IP detail records by parsing VoIP protocols at an IP layer, the media layer and the signaling layer.

Claim 31 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises translating one or more signaling fields in a signaling message associated with the one or more VoIP packets.

Claim 32 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises performing resource reservation for a call signal.

Claim 33 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises re-routing a call signal.

Claim 34 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises re-directing a call signal based on a load balancing criteria for determining a use of gateways.

Claim 35 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises duplicating call signals.

Claim 36 (Original): The method of claim 12, wherein modifying at the signaling layer one or more signaling characteristics further comprises aggregating call signals.

Claim 37 (Original): The method of claim 36, further comprises maintaining an open signaling connection between two or more VoIP processors of the plurality of VoIP traffic processing devices.

Claim 38 (Original): The method of claim 1, wherein the one or more application programs implement one or more policy decisions associated with a VoIP traffic.

Claim 39 (Original): The method of claim 1, wherein the one or more application programs comprise a call aggregation application program that aggregates a plurality of packets pertaining to a same call into one aggregated packet.

Claim 40 (Cancelled)

Claim 41 (Currently Amended): A method of processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network comprising~~The method of claim 1, wherein the one or more application programs comprise a traffic engineering application further comprising the steps of~~:

providing in the packet-switched network one or more ~~of the~~ VoIP processors at each of a plurality of alternative routing points ~~in the packet-switched network~~ such that the VoIP processors form a virtual network ~~that is~~overlaid upon the packet-switched network, wherein a first one of the alternative routing points is at an edge of a traffic-engineered domain of the packet-switched network and at least a second of the alternative routing points is at a peering point of presence associated with a service provider of the network, and further wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate voice packets at a transport layer, a media layer and a signaling layer of the call, and (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions;

detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more VoIP packets;

modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs, wherein at least one of the application programs comprises a traffic engineering application;

under control of the traffic engineering application, creating and storing one or more specified routes from at least the first one of the alternative routing points to at least the second of the alternative routing points, in association with network performance criteria information;

at one of the VoIP processors, detecting that the network performance criteria are satisfied for at least one call that has been routed along a conventional routing path in the packet-switched network; and

re-routing the at least one call along one of the specified routes between two or more of the VoIP processors of the virtual network.

Claim 42 (Currently Amended): A method of processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network comprising~~The method of claim 1, wherein the one or more application programs comprise a resource reservation application, and further comprising the steps of~~:

providing in the packet-switched network one or more ~~of the~~ VoIP processors at each of a plurality of resource reservation points in the packet-switched network, wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate voice packets at a transport layer, a media layer and a signaling layer of the call, and (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions;

detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more VoIP packets;

modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs, wherein at least one of the application programs comprises a resource reservation application;

under control of the resource reservation application~~,~~ at one of the VoIP processors, detecting that one of a plurality of network performance criteria are satisfied for at least one call that has been routed along a ~~conventional~~ routing path in the packet-switched network;

creating an aggregated resource reservation request for a plurality of calls; and

communicating the aggregated resource reservation request to all the VoIP processors such that a large reservation is established across the network between pairs of VoIP processors.

Claim 43 (Original): The method of claim 42, wherein the network performance criteria comprises a number of current calls in the network.

Claim 44 (Original): The method of claim 1, wherein the one or more application programs comprise a load balancing application and further comprising the steps of:

logically coupling the one or more VoIP processors to a plurality of gateways in the packet-switched network;

routing all the packets associated with the call to a selected one of the gateways that is best able to carry the call according to a load-balancing determination within the load balancing application.

Claim 45 (Original): The method of claim 1, wherein the one or more application programs comprise a billing and interconnect verification application and further comprising the steps of:

under control of the billing and interconnect verification application, at one of the VoIP processors, creating and storing one or more sets of call detail information collected at the media layer and the signaling layer for one or more voice calls that are traversing a network in which the VoIP processor resides;

creating and storing a call detail record for each of the voice calls based on the call detail information.

Claim 46 (Original): The method of claim 45, wherein the call detail information comprises one or more values selected from among the call length, number of packets transmitted, service granted to such packets and call quality.

Claim 47 (Currently Amended): A method of processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network comprising~~The method of claim 1, wherein the one or more application programs comprise an access control and fraud detection application and further comprising the steps of~~:

providing in the packet-switched network one or more VoIP processors, wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate voice packets at a transport layer, a media layer and a signaling layer of the call, and (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions;

detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more VoIP packets;

modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs, wherein at least one of the application programs comprises an access control and fraud detection application;

under control of the access control and fraud detection application, monitoring one or more packets associated with a call at the signaling layer and the media layer;

determining that a user associated with the call has signaled an end of the call and that a media stream associated with the call remains in operation; and

in response to such determination, dropping all packets associated with the call from further transmission within the packet-switched network.

Claim 48 (Original): The method of claim 47, further comprising the steps of, in response to such determination, inserting one or more packets that sound a warning to the user associated with the call.

Claim 49 (Original): The method of claim 1, wherein the one or more application programs comprise a protection against denial of service application and further comprising the steps of:

creating and storing state information associated with all calls in the packet-switched network, including port numbers of all calls;

determining that one or more calls comprise an unexpectedly large plurality of RTP-like packets;

in response to such determination, dropping all packets in the large plurality from further transmission within the network.

Claim 50 (Original): The method of claim 1, wherein the one or more application programs comprise a real-time transport protocol reconstruction application and further comprising the steps of:

under control of the reconstruction application, detecting loss of at least one packet associated with a plurality of packets associated with a call that is passing through the one or more VoIP processors;

creating and storing a reconstructed packet to replace a lost packet based on characteristics of other packets within the plurality of packets; and

forwarding the reconstructed packet in place of the lost packet among the plurality of packets associated with the call.

Claim 51 (Original): The method of claim 1, wherein the one or more application programs comprise a call privacy application and further comprising the steps of:

under control of the call privacy application, encrypting the voice packets;

forwarding the data packets in encrypted form to a second VoIP processor that is associated with a terminating endpoint of the call and that is configured to decrypt the data packets.

Claim 52 (Original): The method of claim 1, wherein the one or more application programs comprise a differentiated services application and further comprising the steps of, under control of the differentiated services application, carrying out one or more operations selected from among: setting a priority value of all packets associated with a specified call; accepting a resource reservation request based on one or more policies; denying the resource reservation request based on one or more policies.

Claim 53 (Original): The method of claim 1, wherein the one or more application programs comprise a lawful interception application and further comprising the steps of:

under control of the lawful interception application, duplicating one or more packets associated with a specified call that is a subject of law enforcement monitoring to result in creating and storing a plurality of duplicated packets;

forwarding the duplicated packets to a tapping application that is configured to reconstruct the specified call based on the duplicated packets.

Claim 54 (Original): The method of claim 1, wherein the one or more application programs comprise a service selection application and further comprising the steps of:

logically coupling the one or more VoIP processor to a plurality of service providers that can send and receive calls destined or originating outside the packet-switched network;

receiving service information that identifies one of the plurality of service providers that has been previously selected by a calling party associated with a specified call that is passing through the VoIP processor;

forwarding all packets associated with the specified call to one of the plurality of service providers based on the service selection information.

Claim 55 (Currently Amended): A computer-readable medium comprising one or more sequences of instructions for ~~of~~ processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network, wherein the packet-switched network includes one or more VoIP processors at each of a plurality of alternative routing points such that the VoIP processors form a virtual network overlaid upon the packet-switched network, wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate one or more voice packets at a transport layer, a media layer and a signaling layer of the call, (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions, and (c) executes one or more application programs that provide one or more call processing functions by selectively calling one or more of the primitive software functions and are independent of any underlying protocols of an existing network, and in which the sequences of instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

creating and storing call state information associated with each call that is represented by the one or more VoIP packets;

detecting, at one of the VoIP processors, network congestion along a routing path in the packet-switched network; and

modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of the one or more application programs to re-route a call along a virtual path between two or more of the VoIP processors of the virtual network.

Claim 56 (Currently Amended): An apparatus for processing data packets representing voice over Internet Protocol (VoIP) calls in a packet-switched network, comprising:

one or more VoIP processors at each of a plurality of alternative routing points such that the VoIP processors form a virtual network overlaid upon the packet-switched network~~in the packet-switched network~~, wherein each of the VoIP processors (a) executes a voice packet processing operating system that is configured to monitor or manipulate the packets at a transport layer, a media layer and a signaling layer of the call, (b) includes a plurality of independently callable primitive software functions that carry out low-level VoIP packet processing functions, and (c) executes one or more application programs that provide one or more call processing functions by selectively calling one or more of the primitive software functions and are independent of any underlying protocols of an existing network;

means for detecting VoIP packets that pass through the one or more VoIP processors and identifying one or more values of fields in the packets;

means for creating and storing call state information associated with each call that is represented by the one or more VoIP packets;

means for detecting, at one of the VoIP processors, network congestion along a routing path in the packet-switched network; and

means for modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of the one or more application programs to re-route a call along a virtual path between two or more of the VoIP processors of the virtual network.

Claim 57 (Currently Amended): An apparatus for processing VoIP traffic, the apparatus comprising:

means for overlaying one or more VoIP processors at alternative routing points such that the VoIP processors form a virtual network overlaid upon~~of a plurality of VoIP processors on~~ an existing packet-switched network;

means for listening to VoIP packets that are passing through the one or more VoIP processors~~traffic processing devices~~;

means for parsing one or more VoIP packets that are passing through the one or more VoIP processors~~traffice processing devices~~;

means for tracking and storing a state information associated with the one or more VoIP packets; ~~and~~

means for providing on the one or more VoIP processors a VoIP operating system on which can be executed a plurality of VoIP applications that are independent of any underlying protocols of the existing network;

means for detecting, at one of the VoIP processors, network congestion along a routing path in the packet-switched network; and

means for modifying one or more of the VoIP packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs to re-route a call along a virtual path between two or more of the VoIP processors of the virtual network.

Claim 58 and 59 (Cancelled)

Claim 60 (Currently Amended): A method of processing data packets representing video over Internet Protocol data in a packet-switched network, the method comprising the computer-implemented steps of:

providing in the packet-switched network one or more video over Internet Protocol processors at each of a plurality of alternative routing points such that the video over Internet Protocol processors form a virtual network overlaid upon the packet-switched network, wherein each of the video over Internet Protocol processors (a) executes a video packet processing operating system that is configured to monitor or manipulate the packets at a transport layer, a media layer and a signaling layer, (b) includes a plurality of independently callable primitive software functions that carry out low-level video over Internet Protocol packet processing functions, and (c) executes one or more application programs that provide one or more video processing functions by selectively calling one or more of the primitive software functions and are independent of any underlying protocols of an existing network;

detecting video over Internet Protocol packets that pass through the one or more video over Internet Protocol processors and identifying one or more values of fields in the packets;

creating and storing video state information associated with each video display that is represented by the one or more video over Internet Protocol packets;

detecting, at one of the video over Internet Protocol processors, network congestion along a routing path in the packet-switched network; and

modifying one or more of the video over Internet Protocol packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more video processing functions of the one or more application programs to re-route the video over Internet Protocol packets along a virtual path between two or more of the video over Internet Protocol processors of the virtual network.

Claim 61 (Currently Amended): An apparatus for processing data packets representing video over Internet Protocol data in a packet-switched network, comprising:

one or more video over Internet Protocol ~~data~~ processors at each of a plurality of alternative routing points such that the video over Internet Protocol processors form a virtual network overlaid upon~~in~~ the packet-switched network, wherein each of the video over Internet Protocol ~~data~~ processors (a) executes a video packet processing operating system that is configured to monitor or manipulate the packets at a transport layer, a media layer and a signaling layer, (b) includes a plurality of independently callable primitive software functions that carry out low-level video over Internet Protocol ~~data~~ packet processing functions, and (c) executes one or more application programs that provide one or more video processing functions by selectively calling one or more of the primitive software functions and are independent of any underlying protocols of an existing network;

means for detecting video over Internet Protocol ~~data~~ packets that pass through the one or more video over Internet Protocol ~~data~~ processors and identifying one or more values of fields in the packets;

means for creating and storing video state information associated with each video display that is represented by the one or more video over Internet Protocol ~~data~~ packets;

means for detecting, at one of the video over Internet Protocol processors, network congestion along a routing path in the packet-switched network; and

means for modifying one or more of the video over Internet Protocol ~~data~~ packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more video processing functions of the one or more application programs to re-route the video packets along a virtual path between two or more of the video over Internet Protocol processors of the virtual network.

Claim 62 (Currently Amended): An apparatus for processing video over Internet Protocol data traffic, the apparatus comprising:

means for overlaying one or more video over Internet Protocol data processors ~~of a plurality of video over Internet Protocol data processors~~ at each of a plurality of alternative routing points such that the video over Internet Protocol processors form a virtual network overlaid upon ~~on~~ an existing packet-switched network;

means for listening to video over Internet Protocol packets that are passing through the one or more video over Internet Protocol data processors ~~traffic processing devices;~~

means for parsing one or more video over Internet Protocol data packets that are passing through the one or more video over Internet Protocol data processors ~~traffic processing devices~~;

means for tracking and storing a video state information associated with the one or more video over Internet Protocol data packets; ~~and~~

means for providing on the one or more video over Internet Protocol data processors a video over Internet Protocol data operating system on which can be executed a plurality of video over Internet Protocol data applications that are independent of any underlying protocols of the existing network

means for detecting, at one of the video over Internet Protocol data processors, network congestion along a routing path in the packet-switched network; and

means for modifying one or more of the video over Internet Protocol packets at either the transport layer, the media layer, or the signaling layer as required to carry out one or more call processing functions of one or more application programs to re-route a call along a virtual path between two or more of the video over Internet Protocol processors of the virtual network.

Claim 63 (Currently Amended): An apparatus for processing voice~~video~~ over Internet Protocol data traffic on a network, the apparatus comprising:

one or more physical interfaces through which voice~~video~~ over Internet Protocol data packets enter and leave;

a switching interface that receives the voice~~video~~ over Internet Protocol data packets from the one or more physical interfaces for distribution to one or more components of a voice~~video~~ over Internet Protocol data system;

one or more classification engines coupled to the switching interface for classifying the voice~~video~~ over Internet Protocol data traffic;

one or more processors coupled to the switching interface and to the one or more classification engines to receive the voice~~video~~ over Internet Protocol data packets therefrom;

a memory accessible to the one or more processors; and

one or more sequences of instructions stored in the memory which, when executed by the one or more processors, cause the one or more processors to carry out the steps of:

listening to the voice~~video~~ over Internet Protocol data packets that are passing through the apparatus;

parsing one or more voice~~video~~ over Internet Protocol data packets that are passing through the apparatus;

tracking and storing a voice~~video~~ state information associated with the one or more voice~~video~~ over Internet Protocol data packets; and

executing one or more voice~~video~~ over Internet Protocol data applications of a plurality of voice~~video~~ over Internet Protocol data applications that are independent of any underlying protocols of the network to detect, at one of the VoIP processors, network congestion along a routing path in the network and modify one or more of the voice over IP data packets at either a transport layer, a media layer, or a signaling layer as required to re-route a call along a virtual path between two or more of routing points.

Claim 64 (Currently Amended): An apparatus for processing video over Internet Protocol data traffic on a network, the apparatus comprising:

one or more physical interfaces through which video over Internet Protocol data packets enter and leave;

a switching interface that receives the video over Internet Protocol data packets from the one or more physical interfaces for distribution to one or more components of a video over Internet Protocol data system;

one or more classification engines coupled to the switching interface for classifying the video over Internet Protocol data traffic;

one or more processors coupled to the switching interface and to the one or more classification engines to receive the video over Internet Protocol data packets therefrom;

a memory accessible to the one or more processors; and

one or more sequences of instructions stored in the memory which, when executed by the one or more processors, cause the one or more processors to detect, at one of the processors, network congestion along a routing path in the network and modify one or more of the video over Internet Protocol data packets at either a transport layer, a media layer, or a signaling layer as required to re-route a call along a virtual path between two or more of routing points by ~~carry out the steps of~~:

IP processing associated with one or more video over Internet Protocol data packets of a plurality of video over Internet Protocol data packets at a transport layer;

media processing at a media layer; and

video processing at a signaling layer.